

CHP Analysis Meeting

EEA CHP Installation Database: CHP Capacity in 2000

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Energy and Environmental Analysis

- Professional services company focusing on energy markets and technologies
- Distributed generation and CHP
- Analysis of energy technologies and markets
- Environmental policy analysis
- Energy supply and demand modeling and forecasting



Why Collect CHP Installation Data?

- Understand market trends
- Help guide policy initiatives
- Help guide R&D efforts
- Track progress towards CHP Challenge Goal



Who Collects CHP Data

- EEI, GRI – stopped in 1999
- EIA – annual non-utility generation survey (> 1MW)
- Private databases
 - ✓ Hagler Bailly (PA Consulting) – stopped in 2000
 - ☆ Began in late 1980's
 - ✓ No other comprehensive coverage



EEA CHP 2000 Database

- Based on final Hagler Bailly/PA Consulting independent power database
 - ✓ Independent power, merchant power, small power producer, cogeneration
 - ✓ EEA/Energy Nexus licensed proprietary data
 - ✓ Corrected and expanded with internal EEA data
- Augmented with EIA 2000 data
 - ✓ Additional sites
 - ✓ Additional data
- Additional sources
 - ✓ ORNL FEMP federal CHP sites
 - ✓ IDEA
 - ✓ USCHPA
- Review and inclusion of EIA data and additional sources supported by ORNL/DOE



Hagler Bailly/PA Consulting 2000 Database

- “Independent Power Database” – 3051 sites, 228 GW
 - ✓ IPPs, small power producers, CHP
- CHP subset: 2249 sites; 60,268 MW
- Size range: 5 kW and up
- Data sources: FERC filings, news alert services, industry publications
- Focus: Started to track changes in power market, includes information on ownership, joint ventures, etc.
- Status: No longer supported by PA Consulting (Hagler Bailly)



Hagler Bailly/PA Consulting 2000 Database

- Original CHP data – 2249 sites; 60,268 MW
- Verified CHP data – 2161 sites; 57,919 MW
 - ✓ Eliminated duplicates, site closures, retirements



EIA 2000 Database

- Non utility generation database – 2879 sites; 522 GW
- CHP subset: 1151 sites; 65,331 MW
- Size range: 1 MW and up
- Data sources: Form EIA-860 sent to generators based on FERC filings and trade information
- Focus: Tracks non –utility generation assets by individual units/systems.
- Status: Site-specific data initially made available for 1999; Preliminary 2001 data now available



EIA 2000 Database

- Original CHP data – 1151 sites; 65,331 MW
- Verified CHP data – 981 sites; 58,108 MW
 - ✓ Eliminated non-CHP sites (hydro, geothermal, wind, etc)
 - ✓ Corrected coding errors
 - ✓ Eliminate low-usage systems (<900 hours)
 - ✓ MW estimate based on CHP units only



EEA CHP 2000 Database

- HB / EIA merge
 - ✓ 712 sites matched
 - ✓ 269 sites; 7,436 MW added from unmatched EIA
- Other sources
 - ✓ Additional sites added
- Site information expanded
 - ✓ SIC, location, prime movers, primary fuel



EEA CHP 2000 Database

- Operating CHP in 2000
 - ✓ 2,434 CHP sites
 - ✓ 65,688 MW



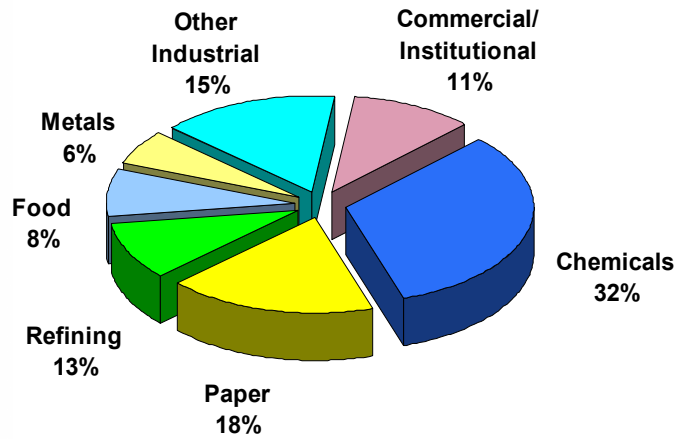
CHP Site Data

- Facility name and location
- 2- and 4-digit SIC
- Prime mover
- Capacity (kW)
- Primary and secondary fuels
- Servicing utility
- Power sales to utility (yes/no)
- Ownership (self, 3rd party)
- Initial operating date
- Thermal Data (not complete)



Industrials Represent 89% of Existing CHP Capacity

- Existing CHP Capacity (2000) 65,688 MW

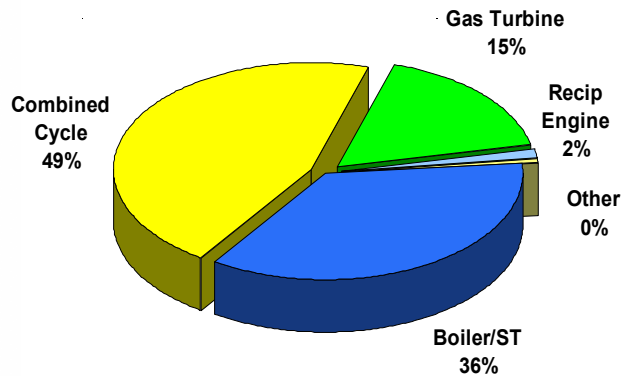


Source: EEA



Gas Turbines Dominate Capacity

- Existing CHP Capacity: 65,688 MW

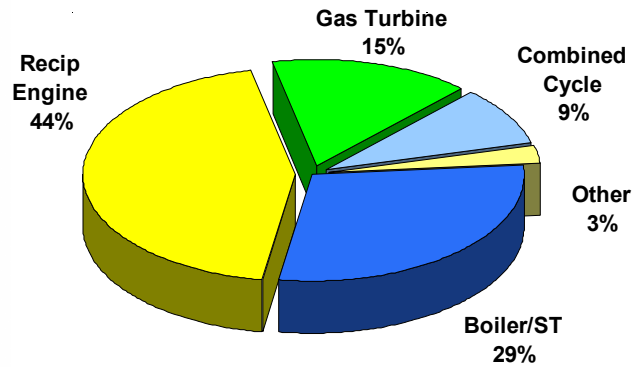


Source: EEA



Recip Engines Dominate Sites

- Existing CHP Installations: 2434 sites

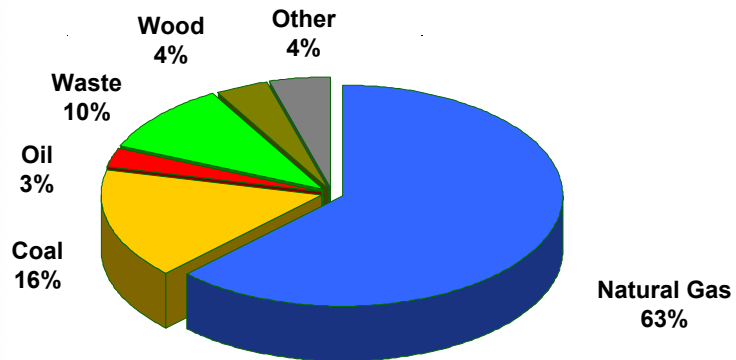


Source: EEA



Natural Gas Is the Preferred Fuel

- Existing CHP Capacity: 65,688 MW

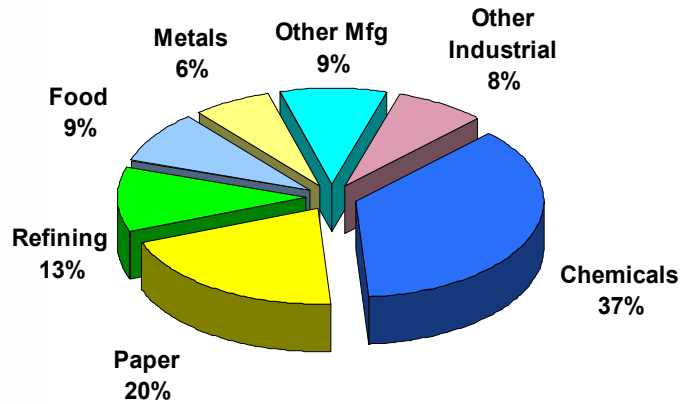


Source: EEA



Existing Industrial CHP

- Existing **Industrial** CHP Capacity: 58,636 MW

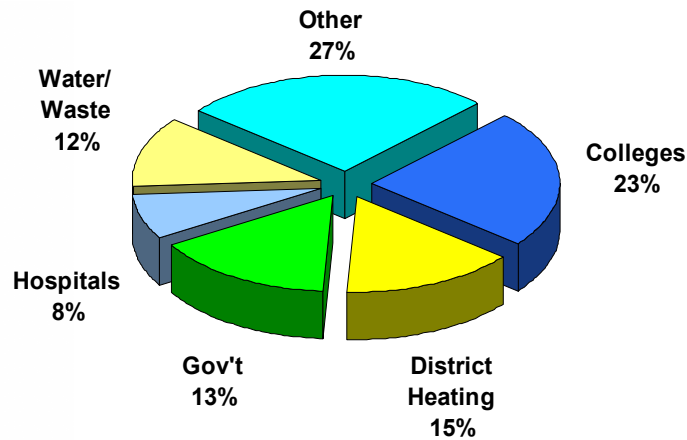


Source: EEA



Existing Commercial CHP

- Existing **Commercial** CHP Capacity: 7,052 MW

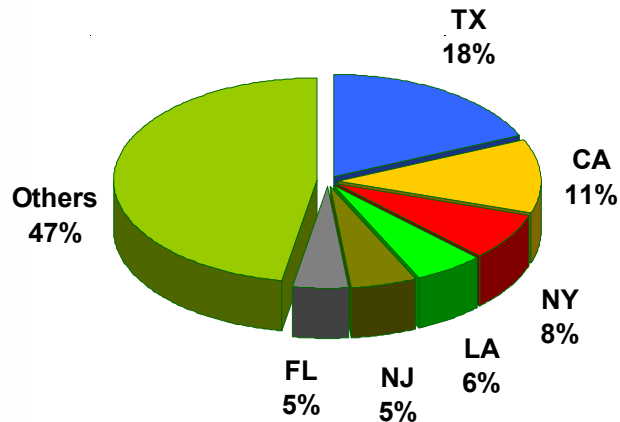


Source: EEA



Six States Cover Over One Half of Existing CHP Capacity

- Existing CHP Capacity: 65,688 MW



Source: EEA



Current Efforts Are Focused on Updating CHP Database to 2003

- Review EIA 2001 Non-Utility Generators
 - ✓ New sites
 - ✓ Planned and proposed sites – 2002/2003
- Verification and update through regional CHP application centers/initiatives
- Trade sources and publications
- Track small CHP through packagers/suppliers
- Preliminary results in September 2003



Preliminary Comparison of 2000 and 2001 EIA Databases

- EIA 2000 – 981 CHP sites
- EIA 2001 – 846 CHP sites
- EIA 2000/2001 matches – 716 sites
- EIA 2001 new – 130 sites (potential additions to CHP 2000 database)
- 244 sites designated as CHP in EIA 2000 included in EIA 2001 as non-CHP (raises question whether forms are understood and properly completed)
- 21 sites designated as CHP in EIA 2000 dropped from EIA 2001

